

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/835,079 Confirmation No.: 3866  
Applicant : Songxiang Wei  
Filing Date : April 13, 2001  
Title : Application Based Screen Sampling  
Group Art Unit : 2155  
Examiner : Shawki Saif Ismail  
Docket No. : 16440.4011  
Customer No. : 34313

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO OFFICE ACTION**

Sir:

In response to the Office Action dated March 10, 2006, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 15 of this paper.

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### Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method for sharing an application, the method comprising:
  - determining a position and a size of a shared application window displayed in a presenter screen by monitoring and intercepting function calls made by the shared application to a Graphics Device Interface;
  - determining a position and a size of a non-shared application window displayed in the presenter screen by monitoring function calls made by the non-shared application;
  - if the non-shared application window overlaps the shared application window in a region of the presenter screen, determining a position and a size of the overlapping region;
  - capturing a screen shot of an image corresponding to the shared application window; and
  - transmitting the screen shot and information for the position and size of the overlapping region to generate a viewer screen.
2. (Original) The method of Claim 1 further comprising:
  - transmitting the position and the size of the shared application window to a viewer.
- 3-5. (Cancelled)

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6. (Previously presented) The method of Claim 1 further comprising:  
determining whether the position or the size of the shared application window has changed by monitoring function calls made by the shared application; and  
if the position or the size of the shared application window has changed,  
determining a new position or a new size of the shared application window.
7. (Original) The method of Claim 1 further comprising:  
periodically capturing an image corresponding to the shared application window.
8. (Previously presented) The method of Claim 7 further comprising:  
periodically transmitting the captured image to a viewer.
9. (Currently amended) A computer-readable storage medium storing a computer program comprising computer instructions for:  
determining a position and a size of a shared application window displayed in a presenter screen by monitoring and intercepting function calls made by the shared application to a Graphics Device Interface;  
determining a position and a size of a non-shared application window displayed in the presenter screen by monitoring function calls made by the non-shared application;  
if the non-shared application window overlaps the shared application window in a region of the presenter screen, determining a position and a size of ~~an~~ the overlapping region;  
capturing a screen shot of an image corresponding to the shared application window; and  
transmitting the screen shot and information for the position and size of the overlapping region to generate a viewer screen.

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10. (Previously presented) The computer readable storage medium of Claim 9, the computer program further comprising computer instructions for:

transmitting the position and the size of the shared application window to a viewer.

11-13. (Cancelled)

14. (Previously presented) The computer readable storage medium of Claim 9, the computer program further comprising computer instructions for:

determining whether the position or the size of the shared application window has changed by monitoring function calls made by the shared application; and

if the position or the size of the shared application window has changed, determining a new position or a new size of the shared application window.

15. (Previously presented) The computer readable storage medium of Claim 9, the computer program further comprising computer instructions for:

periodically capturing the image corresponding to the shared application window.

16. (Previously presented) The computer readable storage medium of Claim 15, the computer program further comprising computer instructions for:

periodically transmitting the captured image to a viewer.

17. (Currently amended) A data conferencing system comprising:

a presenter computer connected to one or more server computers via a global area computer network and to a presenter display to display a presenter screen;

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a viewer computer connected to the one or more server computers via the global area computer network and to a viewer display to display a viewer screen; and

a computer program executable by the presenter computer, wherein the computer program comprises computer instructions for:

determining a position and a size of a shared application window displayed in the presenter screen by monitoring and intercepting function calls made by the shared application to a Graphics Device Interface;

determining a position and a size of a non-shared application window displayed in the presenter screen by monitoring function calls made by the non-shared application;

if the non-shared application window overlaps the shared application window in a region of the presenter screen, determining a position and a size of ~~an~~ the overlapping region;

capturing a screen shot of an image ~~within~~ corresponding to the shared application window; and

transmitting the screen shot and information for the position and size of the overlapping region to the viewer computer to generate the viewer screen.

18. (Previously presented) The data conferencing system of Claim 17, the computer program further comprising computer instructions for:

transmitting the position and the size of the shared application window to the viewer computer.

19-21. (Cancelled)

22. (Previously presented) The data conferencing system of Claim 17, the computer

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program further comprising computer instructions for:

determining whether the position or the size of the shared application window has changed by monitoring function calls made by the shared application; and  
if the position or the size of the shared application window has changed,  
determining a new position or a new size of the shared application window.

23. (Currently amended) The data conferencing system of Claim 17, the computer program further comprising computer instructions for:

periodically capturing the image corresponding to the shared application window.

24. (Previously presented) The data conferencing system of Claim 23, the computer program further comprising computer instructions for:

periodically transmitting the captured image to the viewer computer.

25. (Currently amended) A computer-implemented method for sharing an application using screen sampling, the method comprising:

receiving from a presenter a selection of a shared application;  
monitoring and intercepting function calls made by the shared application to a Graphics Device Interface to dynamically determine a position and a size of a window displayed in a presenter screen for the shared application;  
monitoring function calls made by a non-shared application to dynamically determine a position and a size of a window displayed in the presenter screen for the non-shared application;  
comparing the position and the size of the window for the shared application against the position and the size of the window for the non-shared application to determine any overlapping regions in the presenter screen

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capturing a screen shot of an image corresponding to the window for the shared application; and

transmitting the screen shot of the image corresponding to the window for the shared application and information for the position and size of the overlapping regions to generate a viewer screen.

26. (Previously presented) The method of Claim 25 further comprising:

using the transmitted screen shot of the image corresponding to the window for the shared application and information for the overlapping regions to display the image to in the viewer screen with the overlapping regions filled in with a preset pattern.

27. (Previously presented) The method of Claim 25 further comprising:

compressing the screen shot of the image corresponding to the window for the shared application.

28. (Previously presented) The method of Claim 25 further comprising:

capturing a screen shot of an updated image corresponding to the window for the shared application; and

transmitting the screen shot of the updated image corresponding to the window for the shared application to update the a viewer screen.

29. (Previously presented) The method of Claim 25 further comprising:

periodically capturing the image corresponding to the shared application window.

30. (Previously presented) The method of Claim 25 further comprising:

determining whether the position or the size of either the window for the shared

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application or the window for the non-shared application has changed; and  
transmitting information about the change in the position or the size to a update  
the viewer screen.

31. (Currently amended) A computer-readable storage medium storing a computer  
program comprising computer instructions for;

receiving from a presenter a selection of a shared application;

monitoring and intercepting function calls made by the shared application to a  
Graphics Device Interface to dynamically determine a position and a size of a window  
displayed in a presenter screen for the shared application;

monitoring function calls made by a non-shared application to dynamically  
determine a position and a size of a window displayed in the presenter screen for the non-  
shared application;

comparing the position and the size of the window for the shared application  
against the position and the size of the window for the non-shared application to  
determine any overlapping regions in the presenter screen

capturing a screen shot of an image corresponding to the window for the shared  
application; and

transmitting the screen shot of the image corresponding to the window for the  
shared application and information for the position and size of the overlapping regions to  
generate a viewer screen.

32. (Previously presented) The computer readable storage medium of Claim 31,  
wherein the computer program further comprises computer instructions for:

using the transmitted screen shot of the image corresponding to the window for  
the shared application and information for the overlapping regions to display the image to



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in the viewer screen with the overlapping regions filled in with a preset pattern.

33. (Previously presented) The computer readable storage medium of Claim 31, the computer program further comprising computer instructions for:

compressing the screen shot of the image corresponding to the window for the shared application.

34. (Previously presented) The computer readable storage medium of Claim 31, the computer program further comprising computer instructions for:

capturing a screen shot of an updated image corresponding to the window for the shared application; and

transmitting the screen shot of the updated image corresponding to the window for the shared application to a update the viewer screen.

35. (Previously presented) The computer readable storage medium of Claim 31, the computer program further comprising computer instructions for:

periodically capturing the image corresponding to the shared application the window.

36. (Previously presented) The computer readable storage medium of Claim 31, the computer program further comprising computer instructions for:

determining whether the position or the size of either the window for the shared application or the window for the non-shared application has changed; and

transmitting information about the change in the position or the size to update the a viewer screen.

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37. (Currently amended) A data conferencing system comprising:

a presenter computer connected to one or more server computers via a global area computer network and to a presenter display to display a presenter screen;

a viewer computer connected to the one or more server computers via the global area computer network and to a viewer display to display a viewer screen; and

a computer program comprising computer instructions for:

receiving from a presenter a selection of a shared application;

monitoring and intercepting function calls made by the shared application to a Graphics Device Interface to dynamically determine a position and a size of a window displayed in the presenter screen for the shared application;

monitoring function calls made by a non-shared application to dynamically determine a position and a size of a window displayed in the presenter screen for the non-shared application;

application against the position and the size of the window for the non-shared application to determine any overlapping regions in the presenter screen;

capturing a screen shot of an image corresponding to the window for the shared application; and

transmitting the screen shot of the image corresponding to the window for the shared application and information for the position and size of the overlapping regions to generate the viewer ~~computer~~ screen.

38. (Currently Amended) A method for sharing an application, the method comprising:

monitoring and intercepting function calls made by a shared application to a Graphics Device Interface to determine a position and a size of a shared application window displayed in a presenter screen;

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monitoring function calls made by a non-shared application to determine a position and a size of a non-shared application window displayed in the presenter screen;

if the non-shared application window overlaps the shared application window in a region of the presenter screen, determining a position and a size of the overlapping region;

capturing a screen shot of an image corresponding to the shared application window; and

using the screen shot and the position and size of the overlapping region to generate a viewer screen.

39. (Previously presented) The method of Claim 38, wherein generating the viewer screen includes filling the overlapping region with a predefined pattern.

40. (Currently amended) A data conferencing system comprising:

a presenter computer connected to one or more server computers via a computer network and to a presenter display to display a presenter screen;

a viewer computer connected to the one or more server computers via the computer network and to a viewer display to display a viewer screen; and

a computer program comprising instructions operable to cause data processing apparatus to perform operations comprising:

monitoring function and intercepting calls made by a shared application to a Graphics Device Interface to determine a position and a size of a shared application window displayed in the presenter screen;

monitoring function calls made by the non-shared application to determine a position and a size of a non-shared application window displayed in the presenter screen;

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if the non-shared application window overlaps the shared application window in a region of the presenter screen, determining a position and a size of the overlapping region;

capturing a screen shot of an image corresponding to the shared application window; and

using the screen shot and the position and size of the overlapping region to generate the viewer screen.

41. (Previously presented) The system of Claim 40, wherein generating the viewer screen includes filling the overlapping region with a predefined pattern.

42. (Previously presented) The method of Claim 1, wherein the function calls by the shared application include a GetRandomRgn function.

43. (Previously presented) The method of Claim 42, wherein the GetRandomRgn function comprises a iNum value of 4.

44. (Previously presented) A method for sharing an application, the method comprising:

determining a position and a size of an OpenGL region of a shared application window displayed in a presenter screen by monitoring OpenGL function calls made by the shared application;

determining a position and a size of a non-OpenGL region of the shared application window displayed in a presenter screen by monitoring function calls made by the shared application;

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determining a position and a size of a non-shared application window displayed in the presenter screen by monitoring and intercepting function calls made by the non-shared application;

if the non-shared application window overlaps the OpenGL region or the non-OpenGL region of the shared application window in a region of the presenter screen, determining a position and a size of the overlapping region;

capturing a screen shot of an image corresponding to the shared application window; and

transmitting the screen shot and information for the position and size of the overlapping region to generate a viewer screen.

45. (Previously presented) A method for sharing an application, the method comprising:

determining a position and a size of a DirectDraw region of a shared application window displayed in a presenter screen by monitoring a DirectDraw COM interface;

determining a position and a size of a non-DirectDraw region of the shared application window displayed in a presenter screen by monitoring function calls made by the shared application;

determining a position and a size of a non-shared application window displayed in the presenter screen by monitoring function calls made by the non-shared application;

if the non-shared application window overlaps the DirectDraw region or the non-DirectDraw region of the shared application window in a region of the presenter screen, determining a position and a size of the overlapping region;

capturing a screen shot of an image corresponding to the shared application window; and

transmitting the screen shot and information for the position and size of the

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overlapping region to generate a viewer screen.

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### Remarks

Claims 1, 9, 17, 23, 25, 31, 37, 38, and 40 have been amended. Claims 1, 2, 6-10, 14-18, 22-45 are currently pending in the application. Applicant respectfully requests reconsideration.

Claims 1, 9, 17, 25, 31, 37, 38, and 40 have all been amended to make clear that the position and size of the shared application window is determined by monitoring and intercepting function calls made by the shared application to the Graphics Device Interface. Support for this amendment can be found, for example, on page 9, lines 7-18 of the specification.

### Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 6-10, 14-18, and 22-41 were rejected under 35 U.S.C. 102(b) as being anticipated over Boss et al. (U.S. 5,758,110). Applicant respectfully traverses.

Claim 1 is patentable over Boss because Boss fails to disclose, teach or suggest "determining a position and a size of a shared application window displayed in a presenter screen by monitoring and intercepting function calls made by the shared application to a Graphics Device Interface," as required by claim 1 (emphasis added). Rather, the sensor application 107 of Boss intercepts display driver calls made by the graphical device interface (GDI) 102 to the display drive 104, and not function calls made by a shared application to the GDI 102, as required by claim 1 (see column 4, lines 49-58). Figure 3 of Boss clearly shows the sensor application 107 intercepting display driver calls made by the graphical device interface (GDI) 102 to the display driver 104, and not function calls made by the Windows application 101, e.g., shared application, to the GDI 102. Therefore, Boss does not disclose, teach or suggest intercepting function calls made by a shared application to the GDI 102, much less doing so to determine the position and size of a shared application window, as required by claim 1. Because Boss fails to disclose, teach, or suggest this claim limitation, Applicant submits that claim 1 is patentable over Boss and respectfully requests that the rejection of claim 1 be withdrawn.

Independent claims 9, 17, 25, 31, 37, 38, and 40 are patentable for the same reasons given above for claim 1. Claims 2, 6-8, 10, 14-16, 18, 22-24, 26-30, 32-36, 39 and 41 are dependent claims, and are therefore patentable for at least the reasons given above for independent claims 1, 9, 17, 25, 31, 37, 38, and 40.

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### Claim Rejections Under 35 U.S.C. § 102

Claims 42-43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boss et al. (U.S. 5,758,110) and in view of "official Notice". Applicant respectfully traverses.

Claims 42-43 depend from claim 1, and are therefore patentable for at least the reasons given for claim 1.

Claims 44-46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boss et al. (U.S. 5,758,110) and in view of Applicant Admitted Prior Art (AAPA). Applicant respectfully traverses.

Claim 44 is patentable over Boss and the AAPA because neither Boss nor the AAPA, taken either alone or in combination, discloses, teaches or suggests determining the size and position of both a non-OpenGL region and an OpenGL region of a shared application window. Boss does not disclose, teach or suggest determining the position and size of two different and distinct graphics regions of the shared application window, much less a non-OpenGL region and an OpenGL region of the shared application. The AAPA does not disclose, teach or suggest this deficiency in Boss. Because neither Boss nor the AAPA teaches or suggests determining the position and size of two different graphics regions of a shared application window, it would not have been obvious to determine the position and size of both a non-OpenGL region and an OpenGL region of the shared application window, as required by claim 44.

For the above reasons, Applicant submits that the claim 44 is patentable over Boss and the AAPA, and respectfully requests that the rejection of claim 44 be withdrawn.

Claim 45 is patentable over Boss and the AAPA because neither Boss nor the AAPA, taken either alone or in combination, discloses, teaches or suggests determining the size and position of both a non-DirectDraw region and a DirectDraw region of a shared application window. Boss does not disclose, teach or suggest determining the position and size of two different and distinct graphics regions of the shared application window, much less a non-DirectDraw region and a DirectDraw region of the shared application. The AAPA does not disclose, teach or suggest this deficiency in Boss. Because neither Boss nor the AAPA teaches or suggests determining the position and size of two different graphics regions of a shared application window, it would not have been obvious to determine the position and size of both a



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non-DirectDraw region and a DirectDraw region of the shared application window, as required by claim 45.

Further, neither Boss nor the AAPA, taken either alone or in combination, discloses, teaches or suggests determining the position and size of the DirectDraw region by monitoring a DirectDraw COM interface. Applicant has discovered that the position and size of a DirectDraw region can be determined by monitoring the DirectDraw COM interface instead of monitoring function calls made by the application directly to DirectDraw. The AAPA does not disclose, teach or suggest determining the position and size of a DirectDraw region by monitoring a DirectDraw COM interface, and Boss only teaches monitoring function calls made by a graphical user interface (GDI), which is not COM based.

For these reasons, Applicant respectfully submits that claim 45 is patentable over Boss and the AAPA, and requests that the rejection of claim 45 be withdrawn.

#### Conclusion

Prompt and favorable action on the merits of the claims is earnestly solicited. Should the Examiner have any questions or comments, the undersigned can be reached at (949) 567-6700.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 15-0665.

Respectfully submitted,

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Dated: May 9, 2006

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